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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,269	11/14/2001	Atsuo Hanami	50099-191	6958

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EXAMINER	
RAO, ANAND SHASHIKANT	
ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/987,269	HANAMI ET AL.	
	Examiner	Art Unit	
	Andy S. Rao	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-15 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-15 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2/4/02 & 4/11/02.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Carr.

Carr discloses motion vector detecting device (Carr: figures 9-12), comprising: a data providing portion for providing template block data which defines pixel data in a template block and search window data which defines pixel data in a search window sized to contain said template block (Carr: column 13, lines 35-55), said data providing portion serving such that chrominance pixel data is contained in said template block data and said search window data according to a predetermined rule in a chrominance signal containing mode (Carr: column 16, lines 4-43); an operational portion for calculating an evaluation value by performing a predetermined inter-pixel calculation between corresponding pieces of pixel data in said template block data and search window block data which is data in a search window block as a part of said search window (Carr: column 13, lines 40-55), each time said search window block data is varied by using said search window data so that a displacement vector which shows a change in position of said template block from an initial position in said search window is varied (Carr: column 14, lines 15-39); and a comparator portion for performing a comparison between said evaluation values corresponding to said displacement vectors and detecting a motion vector on the basis of the result of the comparison (Carr: column 6, lines 60-67), as in claim 1.

Regarding claim 2, Carr discloses a control portion for outputting a mode signal to said input portion, said mode signal indicating whether the mode is said chrominance signal containing mode (Carr: column 10, lines 5-25), as in the claim.

Regarding claim 3, Carr discloses wherein said chrominance signal containing mode includes a chrominance signal mode (Carr: column 10, lines 5-25), said data providing portion includes a data providing portion serving such that only said chrominance pixel data is contained in said template block data and said search window data according to said predetermined rule in

said chrominance signal mode (Carr: column 13, lines 60-67; column 14, lines 1-5), said chrominance pixel data including first chrominance pixel data and second chrominance pixel data (Carr: column 17, lines 25-67), said control portion outputs said mode signal also to said comparator portion (Carr: column 18, lines 15-60), said comparator portion includes a comparator portion judging whether said evaluation values are valid or invalid on the basis of whether the chrominance pixel data types agree or disagree between the corresponding pieces of pixel data in said template block data and said search window block data on the basis of said displacement vectors in said chrominance signal mode (Carr: column 19, lines 20-55), to perform said comparison between said evaluation values judged to be valid corresponding to said displacement vectors (Carr: column 21, lines 1-67; column 22, lines 1-25), as in claim.

Regarding claims 4-6, Carr discloses that wherein said chrominance signal containing mode includes luminance and chrominance mix mode (Carr: column 10, lines 1-20), said data providing portion includes a data providing portion serving such that said luminance pixel data and said chrominance pixel data are contained in said template block data and said search window data according to said predetermined rule in said luminance and chrominance mix modes (Carr: column 13, lines 60-67; column 14, lines 1-5), said control portion outputs said mode signal also to said comparator portion, and said comparator portion includes a comparator portion judging whether said evaluation values are valid or invalid on the basis of whether the pixel data types agree or disagree between the corresponding pieces of pixel data in said template block data (Carr: column 15, lines 55-67; column 16, lines 1-27) and said search window block data on the basis of said displacement vectors in said luminance and chrominance mix mode (Carr: column 14, lines 15-35), to perform said comparison between said evaluation values

judged to be valid corresponding to said displacement vectors (Carr: column 21, lines 1-67), as in the claims.

Regarding claims 7-8, Carr discloses that said operational portion includes an operational portion further multiplying the result of said predetermined inter-pixel calculation by 1/K (K> 1) when the type of said pixel data subjected to said predetermined inter-pixel calculation is said chrominance pixel data (Carr: column 12, lines 1-25), as in the claims.

Carr discloses a motion vector detecting method (Carr: figures 13a-13b, 15) comprising the steps of: (a) providing template block data which defines pixel data in a template block and search window data which defines pixel data in a search window sized to contain said template block (Carr: column 13, lines 35-55), wherein chrominance pixel data is contained in said template block data and said search window data according to a predetermined rule in a chrominance signal containing mode (Carr: column 16, lines 4-43); (b) calculating an evaluation value by performing a predetermined inter-pixel calculation between corresponding pieces of pixel data in said template block data and search window block data which is data in a search window block as a part of said search window (Carr: column 13, lines 40-55), each time said search window block data is varied by using said search window data so that a displacement vector which shows the relative position of said search window block with respect to said template block is varied (Carr: column 14, line 15-39); and (c) performing a comparison between said evaluation values corresponding to said displacement vectors and detecting a motion vector on the basis of the result of the comparison (Carr: column 6, lines 60-67), as in claim 9.

Regarding claim 10, Carr discloses wherein said chrominance signal containing mode includes a chrominance signal mode (Carr: column 10, lines 5-25), said step (a) includes a step

of serving such that only said chrominance pixel data is contained in said template block data and said search window data according to said predetermined rule in said chrominance signal mode (Carr: column 13, lines 60-67; column 14, lines 1-5), said chrominance pixel data including first chrominance pixel data and second chrominance pixel data (Carr: column 17, lines 25-67), and said step (c) comprises a step of judging whether said evaluation values are valid or invalid on the basis of whether the chrominance pixel data types agree or disagree (Carr: column 18, lines 15-60) between the corresponding pieces of pixel data in said template block data and said search window block data on the basis of said displacement vectors in said chrominance signal mode (Carr: column 19, lines 20-55), to perform said comparison between said evaluation values judged to be valid corresponding to said displacement vectors (Carr: column 21, lines 1-67; column 22, lines 1-25), as in the claim.

Regarding claims 11-13, Carr discloses wherein said chrominance signal containing mode includes a luminance and chrominance mix mode (Carr: column 10, lines 1-20), said step (a) includes a step of serving such that said luminance pixel data and said chrominance pixel data are contained in said template block data and said search window data according to said predetermined rule in said luminance and chrominance mix mode (Carr: column 13, lines 60-67; column 14, lines 1-5), and said step (c) includes a step of judging whether said evaluation values are valid or invalid on the basis of whether the pixel data types agree or disagree between the corresponding pieces of pixel data in said template block data (Carr: column 15, lines 55-67; column 16, lines 1-27) and said search window block data on the basis of said displacement vectors in said luminance and chrominance mix mode (Carr: column 14, lines 15-35), to perform

said comparison between said evaluation values judged to be valid corresponding to said displacement vectors (Carr: column 21, lines 1-67), as in the claims.

Regarding claims 14-15, Carr discloses wherein when the type of said pixel data subjected to said predetermined inter-pixel calculation is said chrominance pixel data said step (b) includes the steps of, b-1) obtaining a result through said predetermined inter-pixel calculation, and (b-2) further multiplying the result obtained in said step (b-1) by 1/K (K > 1) (Carr: column 12, lines 1-25), as in the claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lee discloses an apparatus for estimation real-time motion and a method thereof. Kopet discloses a motion estimation coprocessor. Uramoto discloses a motion vector detecting device for compensating for movements in a motion picture. Ishihara discloses a motion vector detecting device. Boice discloses a motion estimation processor for a digital video encoder.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy S. Rao whose telephone number is (703)-305-4813. The examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris S. Kelley can be reached on (703)-305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andy S. Rao
Primary Examiner
Art Unit 2613

ANDY RAO
PRIMARY EXAMINER

asr
August 11, 2004